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The Investigation into Foot-and-Mouth Disease.

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The loss to the agricultural interests of this country caused by the epizootic of foot-and-mouth disease, now fortunately abating, may be partly realised from the statement that the estimated gross sum involved in compensation amounts already to over £2,900,000. This, moreover, is no true measure of the disaster from the point of view of the farmer deprived of valuable pedigree or dairy stock, and suffering from interrupted farm and dairy business; nor does it take account of the injury to farm hands who have lost employment or of the inconvenience to the general public. The enormous importance to the country of acquiring control of this disease, and the devastating effect of want of knowledge concerning some of its essential features, have now been widely realised by all classes of the community. The actual presence of the scourge has forced all concerned to recognise the need for a thorough inquiry; while at the same time is has counteracted the timidity which shrank from facing the really small but often greatly exaggerated risks involved in conducting experiments with the virus. The personnel of the committee appointed to conduct an inquiry and to initiate and direct research has been announced, and it is to be hoped that before the country has thoroughly recovered from the epidemic the institution of well-planned research will have been reached and accepted, and its safety recognised. We sincerely trust that this time vows uttered in distress will not be put aside when the period of immediate danger is over. It is indeed remarkable that with so serious a calamity as an extensive epizootic of foot-and-mouth disease hanging continually over the country so little demand for persistent research should have been made.

There is still great uncertainty about many of the important factors producing both initial outbreaks and subsequent extensions of foot-and-mouth disease. The highest authorities express divergent views on such fundamental matters as the possibility that fodder or litter from abroad, even from South America, could carry the infection to this country. Again, in spite of diligent inquiries and a great desire to learn the truth, we are almost entirely ignorant as to how it happens that outbreaks occur in unexpected places, sometimes 50 or 100 miles from the nearest antecedent infected area. An instance is the recent outbreak in Scotland which, according to Sir Stewart Stockman, is only the second such occurrence north of the Border in the last 22 years. No better explanation is forthcoming than the possible transmission by an untraced human being, by birds, or by vegetables from the continent, the source of infection in any case being purely suppositional. It is not so much the unexpected appearance of cases of disease which causes surprise as the absence of definite knowledge whether it is even possible for any of the suggested means of transference to be effective. One reason for our ignorance as to the means of transmission may be the uncertain infectivity of material from diseased animals. Saliva and the contents of vesicles sometimes contain extremely concentrated virus; in other cases these materials appear to be inert. This variation may be strictly dependent on the stage of the disease, as Vallée has suggested, but in any case no "virus" from affected animals, however probable its activity may appear, can be assumed to be virulent without being tested.

Whilst much of the evidence adduced is necessarily inconclusive and circumstantial, the accounts by veterinarians of epizootics of foot-and-mouth disease, and the means taken to combat them in different countries, contribute suggestive data for further scientific inquiry. In the current number of the *Veterinary Journal* much information of this kind has been collected, together with a brief survey of the present epizootic. The method of dealing with outbreaks, and the results obtained in Switzerland, by Prof. M. L. Panisset, are of special interest on account of the thoroughness of the regulations and the care with which they appear to have been carried out. A stricken farm was surrounded with barbed wire, all ingress or egress of man or animals was forbidden, and small animals such as fowls, cats, and rabbits were destroyed. Nevertheless, though these efforts had a certain effect early in the epizootic, we are told the spread of disease was not prevented. If, as the small amount of published experimental work suggests, inanimate objects can only retain the virus in an active state for a very short time, then the possible transmission by actually infected birds, rats, mice, rabbits, cats, and the like, becomes a more important subject for inquiry. Some most interesting experiments bearing on this question were published by Prof. J. M. Beattie and Mr. D. Peden in *The Lancet* of February 2nd. These writers are inclined to believe that they infected rats with foot-and-mouth disease by feeding them on the lymphatic glands of diseased cattle. The rats showed vesicles on the tongue and feet, and other rats were infected from them. The disease produced had a striking resemblance to experimental foot-and-

mouth disease in the guinea-pig. Unfortunately they were hampered by want of a further supply of virus, and by lack of opportunity to determine by experiments on cattle or sheep whether the infected rats really suffered from foot-and-mouth disease or not.

No statement has yet been published as to the conditions under which research will be conducted through the newly-appointed committee. On those dealing with so complex a task no unnecessary restriction should be imposed. Fortunately it is possible to infect guinea-pigs and to carry on the disease by passage in these animals alone, but it is necessary at times to confirm the diagnosis of the disease in rodents by testing the virus on susceptible ungulates, and space will be needed for keeping and isolating a number of large animals of the kinds most susceptible to the disease. Researches on birds and small mammals can, no doubt, be carried out without risk in properly equipped laboratories, and it is hoped facilities for obtaining virus for this purpose will be given to responsible pathologists who are well qualified and well situated for the conduct of such intricate work. If an experimental farm were established, virus could be given to recognised pathologists, and material of real importance could be tested on large animals; then work similar to that of Beattie and Peden would be encouraged and brought to fruition. The accommodation necessary for large farm animals would be considerable, and it would be important to avoid clogging the wheels of research by making demands for unnecessary tests. For the purpose of co-ordinating the associated activities of pathologists in different places the committee will, no doubt, prove efficient. One of the most important and by no means easy duties of an experimental station is the maintenance of a supply of virus. This must be provided for by passage in animals, and also by preservation of a stock of virus in cold storage. The question of "carriers" amongst recovered animals which harbour and distribute the virus, especially in connection with deep infections of the hoof, is another point to be investigated.

While the natural means of transmission and the measures available to frustrate them are of great importance, especially in this country, the intimate nature of the virus and its possible cultivation in artificial media must not be neglected. The hope implied in this latter inquiry is that means of producing a more certain and lasting immunity than can be obtained by any known method may be discovered. The whole question of immunisation by serum or blood, and the questions of vaccine and serum therapy, are still far from being satisfactorily settled, and it is possible that the efforts of a committee appointed to investigate this one affliction may result in clearing up fundamental points common to many diseases.

Sir Stewart Stockman has fixed the lamb disease investigating centre at Bellingham, Northumberland, with the laboratory installed at Old Town, Otterburn. Captain Daubney, who had charge of the experiments last season, is to arrive at Bellingham on 7th April to commence investigations.

"Roaring" in Horses.*

By G. W. Begg, Glasgow Veterinary College.

By "roaring" is understood a respiratory condition met with in horses due to paralysis of the left recurrent laryngeal nerve, with left vocal cord paralysis as a sequel.

Occurrence.—Roaring is exceedingly common in Great Britain, France, Germany, Austria-Hungary, and isolated cases occur in other countries. Well-bred animals are most often affected. In Argentine and South America generally, in Egypt, India, Arabia and Australia the disease is rarely met with.

Etiology.—According to recent investigations, it would appear that the immense majority of cases of recurrent paralysis are due to infectious diseases. Experience shows that "roaring" is a common sequel to strangles, pneumonia or infectious sore throat, and it is worthy of note that in all these three diseases the *streptococcus equi* is more or less concerned. The effect of strangles is shown clearly in that in the Argentine Republic, where strangles and pneumonia are not of common occurrence, paralysis of the recurrent nerve is only exceptionally observed, while the part played by pneumonia is shown by the records of the German army, in which 4 to 2·8 per cent. of the animals affected with pneumonia afterwards became roarers. In these cases the paralysis is principally due to inflammation and subsequent degeneration caused by bacterial toxins circulating in the blood.

Thomassen showed that there was a degeneration of the nerve fibres, which reached a maximum in the immediate neighbourhood of the larynx, and that the alterations gradually became less pronounced in the central direction until they had disappeared in the nerve within the thorax. Apparently the toxin tends to affect the distal portion of the nerve. In many cases of pneumonia the paralysis may be produced by extension of the inflammation in the left thoracic cavity to the nerve lying in the sub-pleural connective tissue.

Certain poisons may also cause paralysis of the nerve, for it has been demonstrated that in lead poisoning you have degeneration of all the branches of the vagus, the degeneration being most pronounced in the terminal portion of the left recurrent.

Concluding that the majority of cases of laryngeal hemiplegia are due to infectious diseases, at the same time it is necessary to mention other possible causes.

1. Traumatic injury of the nerve.

2. Tumours of the thoracic cavity or any growth or abnormality causing pressure on the nerve.

It should be noted that the left recurrent nerve is considerably longer than the right. It passes round the arch of the aorta, while the right nerve passes round the dorso-cervical artery. There appear to be grounds for the supposition that the longer nerve is

* The Editorial Committee, desiring to encourage the pursuit of literary professional effort amongst senior students, has accepted for publication this prize-winning paper for the year, forwarded by the Secretary of the Glasgow Veterinary Medical Association.

more exposed to unfavourable influences than the right.

In an article I read recently by Dr. Vermeulen, Utrecht, the author demonstrated a connection between disease of the thyroid gland and laryngeal paralysis. His findings were as follows:—

(*a*) In the horse the thyroid gland can be involved in the process of illness, of which paralysis of the larynx on the left side is the most obvious symptom.

(*b*) The nervous disease which causes the laryngeal hemiplegia in the horse, should it ever be primarily peripheral, does not remain so, but in chronic cases central alterations may be indicated.

(*c*) The above-mentioned nervous disease is not limited to the left recurrent nerve, but is a proceeding process which attacks the whole motor system, the left recurrent being most susceptible.

The rôle played by the arytenoid cartilage in the causation of roaring is that of being drawn into the laryngeal lumen by the air current. Normally, during inspiration, the arytenoids are drawn apart, and in forcible inspiration during exertion they are widely drawn apart—in fact, they are forcibly embedded in the soft structures around them, leaving the laryngeal opening free from any obstruction. When the motor nerve governing these movements is paralysed and the muscles upon which the movements depend are atrophied as a result of the paralysis, the arytenoid cartilage on the affected side hangs limp and helpless against the air current, and is drawn inward by the current instead of outward by the muscles during inspiration. Generally the paralysis is only partial, the muscles only enfeebled, and the cartilage moves faintly, although not sufficiently to counteract the forcible air currents required to supply the lungs during severe exertion. The paralysis causes an inspiratory stenosis of the larynx, but during expiration the air can pass out without hindrance, the vocal cord being pushed aside by the outgoing current.

Pathogenesis.—Since the recurrent nerve is a mixed nerve, the excitability of the sensory fibres is first increased, the increased irritability being in proportion to the rapidity with which the process develops. If the disease develops slowly, there may be only very slight irritability of these fibres. Sooner or later the motor fibres lose their conductivity, with resulting paralysis and atrophy of the muscles supplied by them. For some unknown reason, it is only the nerve fibres supplying the muscles dilating the glottis that are affected in the first instance, but afterwards the others may become paralysed. In time, the conductivity of the sensory nerves is lost, with the result that there is loss of sensation in the mucous membrane of the diseased side, and also to some extent of the opposite side, because some fibres of the nerve may pass from one side to the other.

Symptoms.—The most striking symptom is a loud unnatural sound emitted during inspiration. The sound varies in different cases and with few exceptions is heard only during movement. The character and intensity of the sound depend on the degree of stenosis, and continued exercise or great exertion are determining factors in the production of the sounds. Thus in a slight case great muscular exertion, such as galloping on soft ground, causes only a slight whistling sound, while in severe cases a few moments' trotting is sufficient to cause a much more audible sound. Sometimes roaring is audible when the animal is at rest, or on the slightest stimulation of any kind. The quantity of air entering the larynx has an influence on the sound produced. If one nostril of a roarer be closed or both partially closed, the noise due to stenosis disappears immediately.

Respiration is more or less difficult during severe exertion.

Simultaneously with the appearance of the sound, symptoms of dyspnœa set in, the nostrils are dilated, and the anus moves in and out with each inspiration and expiration respectively. In severe cases, if work be continued, suffocation may ensue, and the horse fall down. The difficulty of respiration soon disappears after the animal has rested for a few minutes.

In advanced cases it is often difficult to make animals cough, but the cough in such cases is deep, prolonged and rattling.

According to text-books, there is often a deformity of the larynx on the paralysed side. Unfortunately, I have never come across a case like this. To the eye the larynx was always normal.

Course.—The course is progressive, slow in some, in others more rapid. There is no exact course.

Diagnosis.—The best method of testing a horse is to gallop it in a circle with a lounging rope. If results are not obtained, saddle horses may be galloped, harness horses driven and draught horses given a load to pull. If possible the ground should be soft to cause violent inspirations and to avoid the masking of the sounds by those made by the horse's feet. It is only a high-pitched whistle or a deep roar that indicates stenosis. A sound like this is never produced by a sound animal.

Prognosis.—Recurrent paralysis is constantly progressive and is associated with a decreased power of work or loss in value. The question as to the extent to which the disease affects the animal's capabilities solely depends on the type of work done. Whereas a saddle horse is rendered useless by a moderate severity of the condition, a draught horse or one used at slow paces may last for years.

Treatment.—From time to time various operations have been performed for the relief of roaring, but no method has obtained more favourable and permanent results than excision of the lateral laryngeal ventricle (arytenoidopexy) made popular by Williams, of New York. It consists in complete removal of the mucous membrane of Morgagni's pouch, with the purpose of causing the vocal cord to become attached to the lateral wall of the larynx.

Method of Restraint.—The operation can be performed in the recumbent or the standing position. Personally, I would prefer the recumbent position, with the animal on its back, for this is an operation which calls for smartness and neatness, and these can

be better obtained if the animal is cast and under a general anæsthetic.

In the standing position the patient is placed in the stocks and the head held upward by means of a rope attached to the halter and passed over a beam in the ceiling.

In the recumbent position the patient is cast and secured with hobbles. The chloroform muzzle is then applied and chloroform administered. When the patient is completely under the anæsthetic, it is rolled on to its back and the hocks flexed by means of a rope passed from the metatarsus of the one leg through, below the back, to the metatarsus of the other. A good strong assistant then takes the head between his legs and extends the neck, taking care that it is straight.

Technique.—The space between the angles of the jaws as far forwards as the base of the hyoid bone and overlapping the first ring of the trachea is clipped, washed and shaved, and then rubbed with tincture of iodine. All instruments and swabs are sterilised, also the operator's hands.

Make an incision with a scalpel extending from the body of the thyroid back to the first ring of the trachea. Adam's apple or the body of the thyroid, in the operating position, lies between the jaws, a little anterior to its angles. Carry the incision between the bellies of the crico-thyroid muscles as far as the crico-thyroid membrane. If the incision has been made accurately parallel to and between the bellies of the muscles, there will be practically no hæmorrhage and the operation will be almost a bloodless one. The crico-thyroid membrane is triangular in shape. It is bounded anteriorly by Adam's apple, laterally by the wings of the thyroid cartilage, and at its base by the upper border of the cricoid cartilage. Arrest any hæmorrhage, and then insert the retractors so that the crico-thyroid membrane may be incised. Pierce the membrane at the cricoid cartilage with the scalpel directed obliquely to the trachea. Carry the incision the length of the membrane to the body of the thyroid, using a probe-pointed bistoury. Care should be taken not to injure either the cricoid cartilage or the thyroid cartilage, for when these are interfered with you may have chronic inflammation of the cartilages, succeeded by calcification of the whole larynx. Having exposed the interior of the larynx, the retractor is inserted and fixed or held in position so as to bring the vocal cords into view. Observe the nature of the paralysis. The next step is to swab out the ventricle in order to remove any mucous, which might hinder the burr from grasping the mucous membrane. The burr is now passed to the bottom of the laryngeal sacculi, guided by the index finger of the left hand. It is rotated until the mucous membrane is grasped and then drawn carefully outwards until its head, now covered with mucous membrane, appears at the level of the opening of the ventricle. Without attempting to bring it out further, the mucous membrane is clamped under the head of the burr with long curved forceps. The burr is now removed and the stripping completed by carefully rolling the forceps first in one direction and then another. As it comes out farther from this traction, the other forcep is attached further down, and the same movements repeated, until the inversion is complete. The inverted sac is then resected with curved scissors. Care should be taken that the perichondrium is not injured while fixing the burr to the mucosa.

Another method, that of stripping the ventricle with the finger, is probably better, since there is not the same danger of injuring the cartilage. Passing the fore-finger into the ventricle, the operator grasps the antero-internal edge of the latter, and raises it until it is so tense that it can be incised. The incision is of sufficiently large size to admit the end joint of the fore-finger. By manipulation of the end of the finger the lining membrane of the sac is eviscerated, the sac itself being gripped and lifted out with forceps, and then excised along the edge of the true vocal cord with a scalpel or pair of scissors.

While the muscles of the right arytenoid cartilage in many cases appear but slightly, if at all, paralysed, experience teaches that it is usually best to operate upon both ventricles at once.

However the mucosa is removed, care should be taken that removal is complete, since any remnant incautiously left behind in the ventricle may prevent the desired adhesion of the arytenoid to the thyroid cartilage, or a small patch of mucosa being left deep in the ventricle may permit adhesion of other parts, imprisoning the mucous islet and ending in a mucous cyst.

When the mucosa has been stripped, the larynx is swabbed out to remove all blood clots. It is advisable now to protect the wound in the larynx from litter or dirt until the animal is on its feet. This can be done by applying a towel to the larynx and tying the ends of it over the region of the poll. The animal is now allowed to rise.

AFTER-TREATMENT.—Return the animal to its stall and put it on starvation diet for two days. Give nothing but water. Then gradually bring it round to its normal diet. The external wound is washed daily with an antiseptic solution until healed—usually a period of about three weeks. After the external wound has healed the patient may be given walking exercise, and after two months it may be galloped or cantered. A definite opinion cannot always be given until the horse is in " fit " condition, as many patients make a noise at first and improve as they get " fit."

It is an operation which gives a reasonable prospect of making a useless beast useful in about 75 per cent. of hunters and 90-95 per cent. carriage and cart horses, whilst 10 per cent. will become absolutely noiseless.

SEQUELÆ.—1. *Chronic inflammation of laryngeal cartilages.*—This may manifest itself locally upon the cricoid cartilage, the continuity of which was sacrificed to gain admission into the larynx, or it may attack the whole organ. In either event, it ends in stenosis, which causes a roaring more formidable than

the original. The cartilages become hard and deformed, and sometimes the whole organ undergoes a hypertrophy of the soft structures, together with a calcification of the cartilage. The prevention of this sequel seems impossible, although strict attention should be paid to asepsis during the operation and to careful handling of the laryngeal speculum. The accident is undoubtedly due to post-operative infection.

2. *Pneumonia and Bronchitis.*—These seldom occur, and, when they do, may be attributed to a pre-existing enfeeblement.

3. *Dyspnœa due to Œdema and Emphysema of the Larynx.*—Personally, I think this is a sequel the occurrence of which is very much exaggerated. Some operators even go the length of watching the patient closely for the forty-eight hours succeeding the operation, while others insert a laryngeal tube into the wound in the larynx, and remove it when the danger period is past, usually at the end of the fourth or fifth day.

When this sequel does arise, tube the animal until it passes off.

An Apparent Connection between Braxy and Thyroid Activity.

There are certain facts in regard to braxy and braxy-like diseases which strongly suggest that the root of the trouble lies in a temporary lessening of the efficiency of the thyroid gland, and a consequent lowering of the resistance of the body to bacterial invasion from the alimentary tract. If this be true, some preparation of thyroid, or even simple iodine, given to the sheep during the autumn and winter months would prevent serious losses amongst the flocks.

Braxy is a disease from which sheep die very quickly during the coldest months of the year. Post-mortem examination shows no sign of disease in some cases; in others it shows bacterial infection of the alimentary canal, and in Scotch braxy sheep bacteria are found associated with a lesion of the fourth stomach; sometimes there is even bacterial infection of the peritoneal fluid. McGowan claims that these are putrefactive bacteria, and are not found if the animals suffering from braxy are killed and examined perfectly fresh. He finds other bacteria in the lungs and heart-blood of braxy sheep which have been killed and examined immediately, and claims that these are the specific bacteria of the disease. There is much disagreement amongst the different workers as to the bacterial findings, and there has been keen controversy around the whole subject. One fact emerges, however, and that is that there *is* bacterial invasion of the body from the enteric tract (including lungs) before death, and to a very abnormal degree immediately after death.

The animals are apparently well until a few hours before death, when they become very weak and show symptoms of septicæmia. Usually the best-fed animals succumb to the disease while the less well-fed escape; and the condition is strictly correlated with district, sometimes a flock on one pasture paying a heavy toll to braxy whilst flocks on adjacent pastures escape. Often, too, a change of pasture will put a sudden end to the trouble. There seems to be a sex difference in liability to the disease, for in Scotland at least the hoggs alone are affected. Age also has a great influence, young animals only being attacked.

In Denmark and in Scotland bacteria have been isolated from the alimentary canal and from the peritoneal fluid, and vaccines have been prepared which, when injected into healthy sheep, reduce the number attacked by the disease, and even seem to lessen the severity of the attacks when they do occur. In Scotland a very much older remedy is the "pig dung" treatment. Pigs are fed on a pasture where braxy has been prevalent, and their fæces collected. This is mixed with milk and the strained-off liquid is given to the healthy sheep. This treatment is said to reduce the number of cases of braxy.

Certain known facts in regard to the thyroid gland taken together with the above facts about braxy seem significant. The chief agent in the thyroid's secretion is iodine, and when the demands of the body are being easily met a certain amount of iodine is kept in reserve in a colloidal secretion stored in the vesicles of the gland. When the body makes greater demands this reserve disappears. Now the amount of iodine in reserve in the vesicles, when the demands of the body remain fairly constant, depends entirely on the amount present in the food. Some foods contain more iodine than others, and it is almost certain that different pastures will differ in their iodine content, and therefore some sheep will have more iodine in reserve than others. Be that as it may, one of the chief functions of the thyroid is to prevent auto-intoxication; and for this, those animals which are most richly fed will certainly make greater demands on the gland than those less well fed, and will therefore suffer most from any thyroid or iodine insufficiency. It is well known that overfeeding of any kind puts a great strain on the thyroid gland. Along these lines it is easy to account for the loss of the best-fed, as also for the local distribution of the disease, and for the fact that a change of pasture will often put a sudden end to the trouble in any particular flock. Again, it is known that cold makes a great demand on the thyroid, and it is during the coldest weather that braxy is most prevalent, in fact the first outbreak usually occurs with the first "snap of cold." It is also known that the iodine content of the thyroids of sheep and cattle is at its lowest during the first months of the year, and it is during these and the few preceding months that, due to the cold, the greatest demands are being made on the resources of the gland. As was stated above, it is during this period that braxy is most prevalent. It is also universally true amongst animals that the thyroid of the female is larger and is proportionally richer in iodine than that of the males; and again the facts of braxy fall into line, for in Scotland at least, only the hoggs are subject to the disease. Also the thyroid only reaches its fullest activity with sexual maturity and especially with sexual functioning; and again it is the young animals, especially the castrated males, which are attacked by braxy.

It is of especial interest to note the function of the thyroid in controlling the bacterial fauna of the alimentary tract. In cases of endemic goitre there is an excessively large bacterial fauna of the alimentary canal and a corres-

ponding enlargement of the thyroid gland. This enlargement appears to be due to an attempt to meet excessive demands due to the increased number of bacteria, for several different vaccines prepared from *different* isolated bacteria have proved efficacious in reducing the goitre, as also have several intestinal disinfectants. It seems clear that the thyroid has an important function to perform in safeguarding the alimentary tract, and it is known that in cases of extreme thyroid insufficiency bacteria will invade the walls of the alimentary canal and even pass through. An interesting example of this is reported by McCarrison. Pigeons that have been fed exclusively on polished rice show great derangement of the thyroid, ending in atrophy. Such pigeons "die in large numbers from invasion of their blood by micro-organisms . . . which may inhabit their own intestines, and which in health and with a healthy dietary may exist in this situation as harmless saprophytes." Speaking of deficiencies of certain constituents of the food, he adds, "the effects then . . . are not only failure in the synthesis of the thyroid secretion but a greatly lowered resistance to bacterial invasion."

It is beyond doubt that in cases of braxy in some parts of the world specific bacteria have been found. Some workers have claimed that these specific bacteria are normal inhabitants of healthy sheep. Be that as it may, they are found in unusually large numbers in braxy sheep. If the thyroid, due to shortage of iodine, were unable to meet the extra demands put upon it by excessive feeding and cold, this invasion of bacteria in the walls of the alimentary canal, and even beyond, would be expected. The result would probably be the same whether the bacteria were normally present in small numbers or whether they had been recently taken in with food from infected pastures. Also the fact that vaccines have given good results is to be expected, for they would simply help to keep down a bacterial invasion which under happier thyroid conditions would be prevented naturally. The "pig-dung" treatment also would be expected to give some result, for any bacterial toxin given in small doses causes increased activity of the gland, and thus prepares it to meet increased demands later.

Undoubtedly sheep are on the verge of subthyroidism, for in America very serious losses have resulted from the production of cretin lambs; this difficulty disappeared when iodine was added to the food of the mother sheep.

If, then, the thyroid, which is barely sufficient to meet the normal demands of the body and has not yet reached its fullest efficiency due to sex and age, be overtaxed by season, excessive feeding, and sudden cold, it is not surprising that it should fail in its function of guarding the body from bacterial invasion.

If this be the cause of braxy, the slight differences which have been observed in the disease in different parts of the world are easily understood. The bacteria which attack the sheep may not be the same in all parts of the world, and in Australia there may even be no special bacterial invasion, but simple auto-intoxication as was suggested by Prof. Dakin in 1918.

It is realised that the present suggestion is purely theoretical, but in view of the economic importance of the subject it seems advisable to test the effect of the administration of some thyroid preparation or of simple iodine. I am at present carrying out experiments in Wales along these lines. The present year, however, has not been favourable from the point of view of these experiments, for so far the death-rate from braxy has been very low, even among the controls in the flocks with which I am dealing.*

RUTH C. BAMBER
(MRS. BISBEE).

The University, Liverpool.

Reprinted from "Nature."

The London County Council is meditating an attack on the horse breeding industry. This is not its avowed purpose or intention, but this is what will happen should the contemplated resolution or by-law come into force. It aims at nothing less than declaring horse traffic on the streets of London to be illegal. One can understand why horse haulage should be obnoxious to owners of tractor motors. The streets that are best adapted for motor traction are, as we all know, worst adapted for horses. The smoother the surface the more helpless the draught or driving horse on roads. In the interests of the humane treatment of the horse, it will be argued, his presence on streets paved with tar-macadam or even smoother surfaces should be barred. There is work in this new menace to horse breeding for the National Horse Association of Great Britain. It is precisely to oppose legislation of the kind indicated that Horse Breed Societies should unite their forces. The first step is for the Association named to organise, to bring pressure to bear on the appropriate authority under the London County Council, and for each individual breed society to follow up by an attack on the same objective. If London succeeds in passing a by-law of the kind suggested, other local authorities will be encouraged to go and do likewise.—*Scottish Farmer.*

PROTECTION OF ANIMALS BILL.

The text has been issued of the Protection of Animals Bill, a measure introduced by Mr. Foot and eleven other members to extend the operation of the Protection of Animals Act, 1911, in respect of animals kept in captivity or confinement and released for the purpose of being hunted or coursed. In a memorandum it is explained that the Bill does not apply to any form of sport which is concerned with wild animals in their natural condition of freedom, and does not in any way interfere with the hunting or coursing of such animals. Clause 2 imposes a penalty upon summary conviction of a fine of £25, or alternatively or in addition thereto imprisonment with or without hard labour for three months.

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* An excellent summary of the facts in regard to thyroid is given by McCarrison, "The Thyroid Gland," 1917. A summary of the facts about braxy is given by: (1) Dakin, W. J., "Beverly Sheep Disease." Report of Biological Dept., University of Western Australia, 1918. (2) Galger, S. H., "Investigations into Braxy," Animal Disease Research Association (Scotland), *Journ. of Pathology and Therapeutics*, vol. xxxv. Paris 3 and 4, 1922. (3) McGowan, J. P., "Brachsot or Braxy," *Centralbl. f. Bakt.*, etc., I. Abt. Originale, Bd. 91, Heft 1. Jena. Sept., 1923.

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THRIFT.

Three weeks ago we wrote on the subject of starting practice, and since the article seems to have found favour with a number of readers of the *Record*, we venture to develop the subject a little further, in the hope that what we have to say will prove of some help. In that article we gave as a word of good advice —study thrift. Success in life is largely dependent upon thrift in the individual, and thrift is to be found more in those individuals who follow commerce than in those who follow the arts or practise a profession. In commerce one's whole time is devoted to making every transaction into a financial success, for the benefit of the person or firm that undertakes it. Receipts are weighed against expenses, and if the latter are allowed to mount beyond a certain point in proportion to the former, the venture is no longer a "commercial proposition," and it is abandoned. On the other hand, a profitable undertaking is studied from all points of view with the idea and intention of developing it to the utmost. In all his work, therefore, the business man must keep clearly before him the proportion or relation which his expenses bear towards his receipts, and this inculcates in him (according to his mentality and adaptability) what is called "business instinct."

This instinct is woefully absent as a general rule from professional men, and one would expect it to be so on account of their training. A professional man should not enter his profession with the idea of making his fortune; if that is his aim, he should go in for commerce. His ideal on entering his life's work should be the benefitting of others and advancement of knowledge. But he must live and find the wherewithal to live, and it is here that so many men fail. We need not look outside our own profession to see on nearly every hand men unable to take their proper place in the world; men who live apparently well and comfortably, denying themselves little of the world's comforts, and yet who die leaving nothing but debts and destitution for their wives and families. We hear of pitiful stories of failure which come before benevolent societies; of men with home responsibilities struggling to make ends meet, and at the same time trying to keep up appearances; of men who have fallen into the clutches of the moneylenders. We know of quite a number who hope to pay last year's bills with next year's money, and live in this uncertain state of optimism without real concern for the future of their wives and families. If these men ever *think*, then their thoughts must engender terrible anxiety and worry, and these in turn must militate strongly against the efficient carrying on of their professional work. In some, these thoughts lead to despair and a weakening of effort, and we soon lose sight and knowledge of them.

This state of things is deplorable, but it is, of course, by no means confined to the veterinary profession. We see it on all sides, and the cause is lack of *thrift*. The cultivation of thrift is really not very difficult, and it is really worth while. For the young man starting life it is absolutely essential if he looks for future happiness. It is necessary in the first place to cut one's coat according to one's cloth. In other words, to make a firm rule to buy nothing for which the ready cash is not available, and on no account to mortgage future receipts for present comfort or indulgence. Men seem instinctively anxious and careful to book up work done, and to charge clients accordingly. They are proud enough of their "ledger" and its assets. But what of the other side? Why should they be so reluctant to book up with equal care their expenses and personal expenditure? This side of the business is equally, if not more, important than the accounts of money earned. They look from time to time at their "ledger" and note with gratification the increasing amounts due to them, but ignore the constantly increasing amount of their expenses, which, in fact, need far more careful supervision than possible receipts. This is especially true in the case of professional men whose incomes vary from year to year. And here we would like to draw attention to the fact that many professional men, feeling themselves not very competent to deal with accounts, leave all to a professional accountant who makes up their books once a year. We think this is a bad practice. It is only by personal acquaintance and supervision of one's affairs *as they arise* that one can possibly hope to obtain that knowledge and control of one's affairs that is so essential to success. By personally entering in a book every payment made, and from these *data* compiling a weekly, monthly or quarterly statement of one's expenses, one can see at a glance whether one's expenses are outstripping the limit that the wise man has put upon them, and so set a check upon

them before it is too late. No matter how much (or how little) one may earn, it is most important, and vital for success, that as much as possible should be saved out of it and used to build up capital. The unthrifty man has no capital, but the thrifty man does not take long in building up a reserve capital upon which he can depend if his fortunes prevent his continuing to practise. Most men insure against fire, third party risks, accidents, and so forth, but few insure their future welfare by paying a premium to themselves; in other words, putting a portion of their earnings aside to increase their capital. A young man, who is recently married, or intends to marry, is bound in honour and duty to make adequate provision for his wife and possibly a family, and it should be his first and constant effort to save money and invest it, even though he may have to put up with many personal hardships and have to forego pleasures, amusements and comforts for many years in order to do so. What right has he or any other man to any indulgence whatsoever until he has made adequate provision for those who are dependent upon him? The first few years present the greatest difficulty. Later, when a thrifty habit is secured, things move more easily, and comfort should accompany increasing years. These habits *can* be acquired, and if only a man can be sure of how little he need spend in order to be happy and can keep his expenses low, then there is some inducement to him to work hard and increase his earnings, for he will then realise that what he earns will be available for himself, and that every additional pound means a pound for his own comfort instead of his creditors.

We remind our readers of the eloquent words of Mr. Micawber:—

"My advice is never do to-morrow what you can do to-day. Procrastination is the thief of time. Collar him." . . . "My other piece of advice, Copperfield, you know. Annual income twenty pounds, annual expenditure nineteen nineteen six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery. The blossom is blighted, the leaf is withered, the God of day goes down upon the dreary scene, and—and in short you are for ever floored."

Her Punishment.

The following passages occur in a communication recently received by a country practitioner:—

"I have a cow with a stoppage, started last Tuesday night after watering. She blew up a bit, did not dung much that night, and has not since in any form. Never chewed her cud since Tuesday.

"Seems to have no pain when standing, takes her breath about normal, grunts a bit when lying down.

"I have given her a lot of physic:—2 felon drinks, 3 red drenches, 1 quart of sweet oil, 1 quart of paraffin, 16 cud balls, 3 or 4 doses chloral opiate, 1 lb. goose grease."

Reviews.

"**The Expert Witness,**" by C. Ainsworth Mitchell, M.A. (Oxon.). (Pp. xv. + 188. Price 7s. 6d. Cambridge: W. Heffer and Sons, Ltd., 1923.)

Here is a book that will appeal with some force to those whose fortune or misfortune has placed upon them the duty of giving expert evidence in a Court of Law. The author, Professor Ainsworth, editor of *The Analyst*, an expert in handwriting, is a prolific contributor to scientific literature, and in this book he has given us a most interesting resumé of the many difficulties with which an expert witness may be called upon to contend. A man of science who is called in a Court of Law to give evidence is expected to have special knowledge and to be able to put a true interpretation upon facts which are presented to him. "The training of a specialist in any subject will often enable him to discover facts which would escape the notice of a casual observer, or to draw inferences from facts which would be meaningless unless interpreted by specialised knowledge. It is only in exceptional cases, however, that facts carry such weight as in themselves to decide a point at issue, and, as a rule, only inferences of varying degrees of probability can be drawn from them. The well-known saying 'facts cannot lie' is an obvious platitude, but they may be capable of more than one interpretation, each of which may even be partly true; and so it is an everyday occurrence for expert witnesses to support, in all good faith, conflicting opinions which may be based essentially upon the same facts." The writer points out that certain sections of the public still adhere to the old impression that scientific evidence on behalf of either side may be bought, and that even advocacy comes within the scope of the scientific expert. He quotes cases to disprove these erroneous views, and makes the following remarks, which are especially interesting:—"His evidence should be concerned solely with the truth of certain facts without any reference to how they may affect any person"; and again, "the sole duty of the expert witness is to assist the Court to understand the significance of certain facts, and hence a mistake in any essential point may falsify the whole of his evidence." These maxims are worthy of special consideration by those whose evidence is often required in Police Courts and cruelty cases.

The book contains chapters on medical evidence, the evidence of the chemist, scientific evidence in poison trials, and bacteriological evidence, all of which are of especial interest to members of our profession, while the other chapters on documentary evidence, the expert in handwriting, experts in art, evidence of identity, identification of skin prints (including, by the way, nose prints of dogs and swine), and the application of expert evidence to history, though not of quite the same professional interest, will be found very attractive reading. All the points raised are exemplified in quotations from well-known cases, and the author's style of writing

makes the whole book most readable. He writes with the ease and manner of one who knows his subject thoroughly. The book is well illustrated and the print is good and we have pleasure in recommending it to our readers.

Veterinary Notes: The Stableman's Companion, by Major R. S. Timmis, D.S.O., Royal Canadian Dragoons, with a foreword by Lieut.-Col. T. C. Evans, M.C., D.V.Sc., V.S., R.C.A.V.C.

The author of this little handbook is very careful in his introduction to state that his object in writing it is solely with the idea of assisting horse-loving people to treat minor ailments of the horse while professional aid is being sought, and he refutes the idea that he is trying to take the bread and butter from the mouth of the professional veterinarian. This may be so, but as one reads through the book one notices that he seems to have largely forgotten his good resolution.

Such diseases as ascites, broken wind, tuberculosis, hypertrophy of the heart, roaring or whistling, muscular degeneration, melanosis, etc., can hardly be classed among those requiring immediate attention from the owner prior to the arrival of a qualified veterinary surgeon, yet the author gives a cursory description of the symptoms of these and outlines a form of treatment. Like all similar books where large subjects have been treated in a paragraph or two, the uninitiated stableman may well be forgiven if after reading this book he should consider himself fully competent to deal with all and sundry diseases affecting the equine species.

There are, however, many useful hints given which, if intelligently applied, would go far towards saving an animal's life and be of assistance to the veterinary surgeon when called upon to treat the case. In the chapter headed "A Condensed Pharmacopœia" a fairly long list of drugs is given, stating their action and doses for the horse. It appears to us that it is a dangerous plan to place in the hands of a layman some of the powerful and poisonous drugs mentioned in the list without giving a strong warning as to their potency, and the risks attending their use.

The book is of a handy size and has eight well-printed plates illustrating various breeds of horses. It is published by Messrs. Forster, Groom and Co., Ltd., of 15 Charing Cross, S.W.1. at the price of 2s.

The Dentition of the Camel, by D. S. Rabagliati, O.B.E., B.Sc., F.R.C.V.S., Major, late R.A.V.C. (Cairo: Government Press, 1924, pp. vii., 32, xxvii. plates. Price, P.T. 5 (about 1s.)

In spite of the importance of the camel in certain parts of the Empire, the literature on its diseases and anatomy is very scanty. If for no other reason, therefore, an addition to the bibliography is welcome, but it is all the more so when it includes so much original observation as does the brochure now before us.

(Continued at foot of next column.)

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases.

Three Cases of Equine Tuberculosis.

By J. F. D. Tutt, M.R.C.V.S., F.L.S., F.Z.S., Winchester.

Case No. 1.

Subject. Pedigree Hackney mare, aged 6.

History. The owner had had previous opinions about the mare, as she did not get into the condition she should according to the food given her. At times she would only eat hay, and at others corn only; the teeth had been rasped and various nostrums tried; but as no improvement was apparent, I was consulted on January 17th last year.

Symptoms. The mare was in moderate condition, pulse sluggish, mucous membranes anæmic, temperature and respirations normal. Disinclined to feed. Would pick a little hay and then stop. The teeth were normal, but at the owner's request were rasped, and Fowler's solution of arsenic prescribed.

Subsequent History. No improvement. Some days the appetite was all that could be desired, and she went about her work—slight trotting exercise—as well as ever she did. At other times she was exactly the reverse. I constantly urged the owner to have her tested with tuberculin, but he demurred, having various ungrounded fears about the test that no

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(Continued from previous column.)

During the war, nearly 25,000 camels passed through Major Rabagliati's hands, and the paucity of existing knowledge whereby the age of these animals could be judged was forcibly brought home to him. Little, if any, reliable help being forthcoming from existing publications, Major Rabagliati determined to find out for himself what are the normal types and characters of the teeth, and when they erupt; and the results of his personal observations are now given in a very attractive form.

The work undertaken by the author was a piece of real research of a very valuable kind, carried out with skill and patience. His observations have all been made in Egypt, and the mouths of camels of known ages have been examined regularly every two or three months for six years in some cases, and the state of each tooth noted separately. Though no claim is made that all the statements given are absolutely correct, the author thinks he is justified in assuming that they agree pretty closely with the average. Obviously, except after additional research conducted on parallel or similar lines, criticism of the results is impossible.

The wealth of illustrations, in which dentitions and individual teeth are clearly depicted, adds immensely to the value of a publication that ought to be in the possession of everyone who is in any way interested in a fascinating—because aberrant—group of ruminants.

argument would overcome, and tonics of every description were tried without the slightest benefit. Emaciation was progressive. Finally on June 27th he consented to her being tested, and the temperature readings were as follows :—

At injection, 102 ; 12th hour after, 102·4 ; 15th hour after, 101·4 ; 18th hour after, 102 ; 21st hour after, 101·3 ; 24th hour after, 101 ; 28th hour after, 100·2.

On the morning following inoculation the mare was very lame on the side inoculated (the injection was made into the neck on the near side) and was decidedly "upset," and breathing was distressed on moving. Auscultation previous to injection revealed distinct pulmonary lesions, and respirations were very laboured after trotting her up the road. Coughing was absent.

A definite diagnosis of tuberculosis was made in view of the clinical symptoms and appearance, and the variable temperature record. It may be noted that the pre-inoculation record of 102 was made after the mare had been trotted up—this undoubtedly caused the rise to 102, as at the 48th hour after injection of tuberculin the temperature was 100·2, and after a similar trot it rose to 102.

Knowing that my client did not agree with the diagnosis, I fully expected he would get another opinion, and in this conclusion I was right, for on August 6th he wrote me as follows :—

> "The mare is dead, and died as poor as I have ever seen one on Saturday morning. She had been having Benger's Food, and everything I could think of for some time, but of no avail. Your opinion of her was absolutely correct in every detail, and she was eaten up with tuberculosis. I don't mind telling you that I had another opinion on her, and the verdict given was persistent (pernicious?) anæmia, which made me persevere, but for some time I have felt that you were right, and it has been, I am sorry to say, amply demonstrated."

Case 2.

Subject. Cart mare, 15 years old.

History. The mare had colic on November 30th, 1922, and her illness dated from this, and her condition became rather poor through a disinclination to feed. Worms were suspected and reported as being present in the dung by the owner, and powders were prescribed. In May, 1923, he wrote stating that the emphysema of the lungs which she had had for some time was worse, and asked for medicine which was sent. As no improvement took place, he asked me to see her, and after my examination, I advised testing, but he declined. Symptoms of pulmonary hæmorrhage occurred at intervals of three days to a week, and complete rest was ordered. On July 9th, 1923, she was found dead in a meadow.

Post-mortem. Generalised tuberculosis of the intestines and all the associated mesenteric lymphatic glands. Liver full of tubercular lesions caseating and calcified. Kidneys extensively affected and surrounded by large tubercular lesions. Lungs badly affected and considerable hæmorrhage had taken place, and had been the immediate cause of death. Tubercle bacilli were found microscopically.

Case 3. This is perhaps the most interesting case, as death occurred so soon after onset of illness.

Subject. Bay cart gelding, 9 years old.

History. I first saw this horse on April 4th, 1923, as it was off its feed, but would eat hay occasionally. The teeth required rasping, and this was done, and tonics prescribed. The temperature, pulse, respirations and general condition were at this time normal and good.

From this date until May 2nd last (the day of death) emaciation was rapid, and a fortnight before its death coughing became a marked symptom, and auscultation revealed pulmonary lesions on the right side. Testing was advised, but the owner—a smallholder—demurred. Death occurred on May 2nd.

Post-mortem. Generalised tuberculosis both lungs. Mesenteric lymphatic glands were enlarged and full of caseating and calcified lesions of tuberculosis. Other organs were normal.

Tubercle bacilli were found microscopically.

The use of Pituitrin in Delayed Labour in the Ewe.

By J. F. D. Tutt, M.R.C.V.S., F.L.S., F.Z.S., Winchester.

As is well known, in the ewe, very often after rupture of the fœtal membranes, the labour pains often cease and the os uteri rapidly closes, resulting in the death of the lambs and the ewe.

In this condition the intramuscular injection of Pituitrin (Parke, Davis and Co.) has been attended with very gratifying results.

The initial dose recommended from experience is 2 cc. injected either into the gluteal muscles or the vasti muscles of one of the hind limbs. Further injections of 1 cc. are made every fifteen to thirty minutes depending on the case.

It would appear to be next to useless to inject the Pituitrin subcutaneously, and what failures have been encountered have been traced to this being done. When injected intramuscularly the action is more rapid and pronounced, and lasts longer than when done subcutaneously. Stockowners are readily able to inject it when once they have been shown, and I have had very gratifying reports from those that have used it during the past three seasons; the dead lambs not only having been removed, but the ewe's life saved in many instances.

Divisional Reports.

Lincolnshire and District Division.

The Annual Meeting.

The annual meeting of the Lincolnshire and District Division was held at the George Hotel, Grantham, on Wednesday, February 20th, 1924. At the outset the retiring president, Mr. T. Hicks, of Sleaford, occupied the chair, the other members present being Messrs. F. L. Gooch (Stamford), W. W. Lang (Brigg), Hon. Secretary, G. Lockwood (Peterborough), Edward Porter-Smith (Lincoln), H. Caulton Reeks and Harry C. Reeks (Spalding), F. H. Sugden (Grantham), H. Walpole (Metheringham), A. D. Lalor and A. D. J. Brennan (Sleaford).

The minutes of the last meeting were read, and passed on the motion of Mr. Gooch, seconded by Mr. H. Caulton Reeks.

A letter was read from Mr. T. Knowles, of Wisbech, conveying the lamented news of the death of his father, Mr. R. W. Knowles, of Wisbech. Mr. Gooch referred in sympathetic terms to the death of Mr. Knowles, to whose memory he paid a graceful tribute. He said that Mr. Knowles was an old member of the association, and had rendered most useful service, whilst he had always been very regular in his attendance at the meetings, and took a deep and practical interest in the business of the division. Mr. Knowles' passing was a great loss to them, and he moved that a telegram should be sent from that meeting to the bereaved family expressing the deep sympathy of the members with them in their sorrow.

Mr. Lang, Secretary, said he had written to Mr. Knowles, junior, and he (Mr. Lang) concurred in the remarks of Mr. Gooch.

Mr. Hicks endorsed the sentiments expressed by Mr. Gooch, and, in seconding the resolution, said that the sending of a telegram would show the immediate feelings of the meeting towards the family of their late respected and valued colleague. The meeting passed the resolution by rising and standing silent for a few moments.

Mr. Lang read correspondence which he received, including an invitation from the Royal Sanitary Institute to send a delegate from the association to the Institute Conference at Liverpool in July.

Mr. Hicks said that they could not, as an association, afford to send a delegate, but as Mr. Gooch was a member of the Institute, perhaps he would be so kind as to represent their association.

Mr. Gooch: I shall go if I can, and if I do go I will go as the representative of the association. He added that he thought the time was opportune for the National Veterinary Association to unite with the Sanitary Institute in discussing and dealing with subjects which affected their interests mutually.

There was no response to the invitation of Mr. Hicks for another member to accompany Mr. Gooch.

A letter from the Royal College of Veterinary Surgeons intimated that the question of jury service was under consideration, and it was said that the National Veterinary and Medical Association would support the college in the matter.

The election of officers followed the transaction of routine business.

Mr. Gooch proposed the election of Mr. Lang as president in succession to Mr. Hicks. He said that the association ought to recognise the excellent services which Mr. Lang had rendered as honorary secretary and treasurer and they could fittingly show their appreciation of his splendid work by conferring upon him the honour of the office of the presidency.

Mr. Lalor seconded the motion, and said that he was just about to propose the election of Mr. Lang as President when Mr. Gooch rose.

Mr. Hicks supported the resolution and eulogised the work done by Mr. Lang as secretary and treasurer. The members would be sorry to see Mr. Lang vacate the secretaryship, but they felt that he would make a good President. (Applause.)

The resolution was carried with acclamation, and Mr. Hicks vacated the chair and welcomed Mr. Lang to its occupancy, wishing him a happy and useful term of office. Mr. Lang said he desired to return thanks for the great honour that had been bestowed upon him, and he promised to do his best to carry out the duties of the office of president in such a way as would ensure that the traditions of the association would be worthily upheld. (Applause.)

Mr. Harry C. Reeks was admitted to the membership of the association, on the proposition of the new President, seconded by Mr. Hicks.

When the question of a successor to Mr. Lang as honorary secretary and treasurer was reached, Mr. Hicks moved that Mr. Harry C. Reeks should be appointed. Mr. Porter-Smith seconded, and remarked that the name of Reeks was an old and honoured one amongst veterinary surgeons in the county.

The motion was passed with unanimity, and amid applause Mr. Reeks, junior, said he would be pleased to accept the office, and would strive to carry out the duties to the satisfaction of the members.

Mr. Hicks proposed, and Mr. Porter-Smith seconded, and it was agreed that the President, Secretary, and Mr. Gooch should be the association's representatives on the Council of the National Veterinary Medical Association.

The following were chosen as Vice-Presidents, on the motion of Mr. Gooch, seconded by Mr. Porter-Smith:—Mr. T. Hicks, Mr. A. D. Lalor, and Mr. C. W. Townsend (of Long Stanton).

It was agreed that the consideration of the item on the agenda "Amendment of Rules" should be postponed, and it was thought to be advisable that the fixing of suitable dates of the meetings of the association should be left to the President and the Secretary.

The new President (Mr. Lang) proposed that a vote of thanks should be accorded to Mr. Hicks for his excellent services as President during the past

three years. He said he could assure Mr. Hicks that his work was greatly appreciated. (Hear, hear.)

Mr. GOOCH seconded and associated himself with the sentiments of Mr. Lang. The resolution was carried with acclamation, and Mr. Hicks made appropriate acknowledgments. Expressions of thanks were then tendered to the whole of the officers on the proposition of Mr. GOOCH, seconded by Mr. SUGDEN.

The President mentioned the Tuberculosis Order, and said that, in his opinion, the association ought to support the National Veterinary Medical Association in urging that the Government should be requested to reintroduce it.

Mr. PORTER-SMITH did not agree with the views of the President, and said he should oppose the suggestion to support the National Association in this matter. It was not diplomatic to press for the Order at the present time.

Mr. GOOCH supported the President, and moved that they should support the recommendation of the National Veterinary Medical Association that the Government should be urged to re-introduce the Tuberculosis Order at an early date. He said that this matter was carefully considered at the conference of the National Association, and in his own opinion the Tuberculosis Order was the finest instrument they had ever had in the profession for the eradication of tuberculosis. He looked at the matter from a national standpoint, and he felt that the time was opportune when every veterinary surgeon should do his utmost to fight this disease in animals. (Hear, hear.)

Mr. H. CAULTON REEKS seconded the resolution, and spoke of the need of the recommendation of the National Association being backed up by all members of the profession.

Mr. PORTER-SMITH said that, whilst he regarded the Tuberculosis Order as a good order—and he had sole charge of its administration in the city of Lincoln when it was introduced—he did not think it was of any use making application for the re-introduction of the Order when they knew it would be refused by the Government. It would be far better to wait until the chances of success were more hopeful than they were at this juncture. He, therefore, moved an amendment that the Association should take no action in the matter at the present time, remarking that it was not diplomatic to apply to the Government for something which they knew they would not obtain. (Hear, hear.)

The amendment was put to the meeting and was lost by five votes to four, and the resolution moved by Mr. Gooch was declared carried.

The foot-and-mouth disease regulations were discussed at some length, the matter being raised by Mr. PORTER-SMITH as one of great urgency. He said that, although the authorities were stopping store stock from entering Lincolnshire, they were allowing fat stock to enter, and, in view of the close proximity of the disease, he contended that it was advisable to stop all stock from coming into the county from other areas for a time, so great was the risk of infection.

The PRESIDENT said that the fat stock that was permitted to enter the county came within the terms of the regulations affecting slaughter within a short period of hours.

Messrs. SUGDEN, LALOR, GOOCH, and REEKS joined in the discussion, and ultimately it was decided to send a resolution to the Holland, Lindsey, and Kesteven County Councils (of Lincolnshire) expressing the opinion that so long as the authorities considered it advisable to keep store stock from entering the county from other areas it was inadvisable to allow the movement of fat stock into the county.

Mr. PORTER-SMITH said that that resolution would satisfy him. He was most anxious to keep Lincolnshire free from foot-and-mouth disease, and stock-breeders were becoming apprehensive.

The resolution was sent to the National Veterinary Medical Association as well as to the County Council.

Mr. W. W. LANG'S CASES.

The PRESIDENT (Mr. W. W. Lang) read the following highly-interesting paper on a number of important subjects :—

In presenting these few notes, I am not entering into a learned dissertation on any one subject, but rather giving information on my treatment of diseased conditions which are of more or less frequent occurrence in practice. My object is, of course, two-fold : to assist the members, if possible, and to arouse a good discussion. I propose dealing concisely with the following : Ligature of the digital vein ; treatment of wounds by the physiological method of administering sodium chloride in solution by the tube, and by the aid of the Reading bacillus ; pathological shoeing in cases of ringbone and diseased pyramidal process ; the poll-evil operation ; retained placenta in the cow, and a new type of parturition rope.

LIGATURE OF THE DIGITAL VEIN.—This operation was favourably commented upon in connection with chronic laminitis in an abstract quoted from a foreign journal and published in the *Veterinary Record* in 1916. As a matter of fact, the first operation I saw was performed by Capt. Wortley (late R.A.V.C.) in the Amara Veterinary Hospital, Mesopotamia, and so I am under a debt to the above gentleman.

The technique is simple and as follows :—Clip the hair off the latero-external surface of the fetlock, shave, and disinfect. Inject a local anæsthetic—the operation may be performed in the standing position—and apply above a tourniquet which causes distension of the vein, enabling the operator to ascertain its position with ease in all but very thick-legged horses. When anæsthesia is complete, make a longitudinal incision very carefully over the vein, keeping the back of the scalpel to the skin ; introduce a grooved director as soon as possible, and incise the skin to the desired extent—about 1½ inches. Repeat the process with the connective tissue until the vein is sufficiently freed to allow of the director being pushed under it—from behind to front, to prevent inclusion of the artery or nerve. Ligature with catgut (easily done through the groove of the director) and push the

vessel back into the wound. I do not find it necessary to suture the skin, though it may be desirable, contenting myself with a dry dressing of bin. iod. rub. grs. ii.—acidi boraci ℥i., cotton wool and a bandage. Allow the dressing to remain on for 10 to 14 days, when the wound will be practically healed; in fact, I do not trouble if the bandage and dressing, by any chance, come off in four to five days.

It is not only in chronic laminitis that I carry out the operation, but in every case of acute laminitis where the animal is still unsound after three to four days of the treatment usually given, *i.e.*, arecoline hydrobromide grs. i to ii., with sodium chloride or bicarb. llb. ss. and formalin ℥i. in a bucket of water daily. Provided I am called in at the outset of the disease, and it is not of a rheumatic nature, I can guarantee a complete cure in over 90 per cent. of cases, which means that there is neither the typical laminitic action nor dropped sole. I have not had an opportunity of trying ligature of the vein in parturient laminitis, my only case becoming perfectly sound within 48 hours with the saline and formalin treatment alone. I must add that I got an excellent start in this case.

It was but a step further to treat intractable wounds below the region of the fetlock, such as are often seen in the tropics, by this method of inducing Bier's hyperæmia. "The effects produced depend on the bactericidal, resorbent, and anodyne action of the procedure, which also favours the regeneration of tissues" (*Veterinary Therapeutics*, E. Wallis Hoare, page 836).

The following is a list of conditions, in addition to laminitis, successfully treated by this method:—

1. *Interdigital abscess in a cow.*—This might have been called, by some, foul of the foot. The patient was lame and under the usual antiseptic treatment by first the owner and then myself for over three weeks. Complete recovery within a fortnight without further treatment; in fact, nothing further was done.

2. *Ram. Suppuration from five or six abscesses round the coronet with excessive granulation filling the whole of the interdigital space.*—The discharge generally ceased and, concurrently, the granulations became absorbed, leaving the animal perfectly sound. He is still quite well, and has been used for stud purposes for two seasons since his operation.

3. *Mare with punctured wound on the side of the frog*, had been poulticed by the owner for three weeks prior to my being called in. The probe revealed an enormous cavity, occupying the whole of the solar surface of the os pedis. Completely healed in three weeks, but still lame, probably owing to adhesions. Lameness steadily decreased with work, and the mare has for a long time been perfectly sound.

4. *A similar case.*—The probe followed the line of the perforans tendon for a distance of five to six inches towards the back of the pastern. Healing took place in three weeks, when the animal, though still lame, was turned out and later sent to work to break down possible adhesions. Steady improvement took place until success was complete.

5. *Descent of the os pedis with perforation of the sole* following rheumatic laminitis. Corresponding with the anterior lower edge of the pedal bone there was a wound in the sole three to four inches long, and from which serum was oozing. In less than a month the wound had healed, the horse was fit for work, and when last seen it was found that the sole, though dropped, had become of considerable thickness and strength; there is no lameness.

The above few instances will show that in hyperæmia, induced by ligature of the digital vein, we have a treatment of considerable value. Despite gloomy forebodings on the part of several veterinary surgeons, no ill-effects were experienced till recently, though I have performed the operation hundreds of times since 1916, but from the knowledge obtained in two instances where degeneration of the leg took place, it would appear that ligature of the digital vein is contra-indicated in acutely-inflamed suppurating conditions within the hoof. I would not have operated but that I was at my wits' end. Should, however, hyperæmia be indicated, it may be obtained, and probably with greater safety, by the use of the elastic bandage, and I am not sure whether, when properly applied, it is not preferable. My chief reason for operating is that the treatment is completed and no further attention is required; besides, it is surgery, and makes an excellent impression on the clients.

Salt Treatment of Wounds, and the Reading Bacillus. ("Saline Solution" in this article refers to sodium chloride in solution.)—For nearly seven years now I have treated all wounds entirely by the tubal administration of sodium chloride in solution. The bacteriolytic power of the serum appears to be considerably raised, and, in any case, I am satisfied that this treatment is superior to the antiseptic methods; the result are quicker and more beneficial, and there is far less scar formation. As an anodyne, too, saline solution is excellent, while the surrounding swellings are rapidly decreased.

In a recent paper by Captain Dalling, timely reference was made to the use of the Reading bacillus. This microbe is a strict anærobe and absolutely devoid of pathogenic powers, being really one of the greatest service to us. Its actions are due to its ability to clear up all necrotic tissue and neutralise toxins formed by pathogenic bacteria. Its presence in a wound is indicated by a peculiar odour with which we are all familiar, but of which we, in our ignorance in the past, have often been at great pains to get rid. During the last eighteen months or so I have been able to get the bacillus on at least half a dozen different farms by keeping the wounds air-proof and treating them entirely by salt solution internally. Growth in wounds is not inhibited by the saline, which is really unnecessary, but which is given to keep down septicæmia.

Over a year ago I had a case of a Shire mare which got her foot entangled in an ordinary wire fence. The flexor tendon was exposed, and at the same time

there was a wound extending from the coronet in front of the lateral cartilage and behind it to the frog. The whole condition appeared so serious that I refrained from ascertaining the full extent and depth of the wound, merely bandaging in cotton wool and relying on my usual salt treatment internally. In three days the Reading bacillus was flourishing, and the mare made a splendid recovery. At no time was there any cellulitis above the wound.

In three quittor cases after the Perrier operation the wounds were packed with salt, covered up and never looked at again until the peculiar odour of the bacillus had gone, when examination revealed complete healing.

Two cases of badly lacerated fore-arms made excellent recoveries; the scars can be found only with difficulty, though in one case an enormous flap of skin and muscle about six inches long and four wide was detached and hanging down.

As soon as the presence of the bacillus is indicated by the smell, one finds a great improvement in the general condition, and my experience so far is that one can then confidently anticipate a successful issue.

Pathological Shoeing in Cases of Ringbone and Diseased Pyramidal Process.—I have no doubt that I am not the only one who has had unsuccessful results following firing and blistering. Over and over again, especially on service, I have had the mortification of seeing my patients returned for treatment within a fortnight of discharge for duty.

This gave food for thought, and so for the last four years I have had General Blenkinsop's shoe with the rolled toe put on. This treatment is, of course, only palliative, but I have the satisfaction of seeing my patients kept at work and often becoming sound in action and remaining so, in some cases after the return to the usual type of shoe.

The following are typical results:—

1. Horse lame from ringbone, both fore. Shod for three months with rolled toe, when the customary type was reverted to; has kept sound for three years.

2. Horse, also lame both fore. One month only with the rolled toe with immediate relief. Kept sound for some considerable time, when he was sold and lost sight of.

3. Baker's cob, lame from ringbone for some considerable time; now trots quite sound—the type of shoe has been retained in this case.

4 and 5. Two Shire mares, mother and daughter; each of them lame from a pyramidal process. Improved out of all recognition.

Horses, too, which catch a hind toe and knuckle over are considerably benefitted; the tripping, with its consequences, is done away with in many instances. It would almost appear as if every horse, in some respects at least, would be better shod with this type of shoe, an example of which I have here to-day.

Poll-Evil Operation.—All I wish to say about this is concerned with the history of my last case, on which Mr. Harry C. Reeks and myself jointly operated on November 14th last.

The usual method of making the incision through the mane and resecting the ligament was adopted, but instead of cutting the ligament straight across at the distal end of the wound, the incisions on either side of the cordiform portion were brought to a point, with the result that there was no retraction of the stump, or rather no stump to retract, and consequently no pocket resulted. This method of excising the ligament was accidental, but its possible value was at once apparent. On the following day the sutures holding in the packing of cotton wool were cut and the wool fell out on the 17th. Immediately after the operation and on each of the three succeeding days salt solution in the usual quantity and strength was administered per tube.

No further treatment of any kind was given, and when I examined my patient the other day, recovery appeared to be perfect. I was anxious for the advent of the Reading bacillus in this case, but the hope did not materialise, though probably, had the whole wound been kept air-proof, growth of the bacillus would have taken place.

Retained Placenta in the Cow.—This condition is still a bugbear to many of us, and I feel sure that manual interference has often been productive of more harm than good; nor do I view ecbolics with much favour. For the last three to four years I have treated retention by the administration of salt and formalin per tube, and leaving more to be given in smaller doses. By this method I have often found constitutional improvement as indicated by improved appetite and decreased temperature on the day following commencement of the treatment, even though the placenta is still *in situ*. Decomposition is retarded, and I often find that after two or three days the placenta comes away quite easily in one piece. If coming by itself, I leave it alone, discouraging even the tying on of weights.

My main reason for mentioning this condition, however, is with reference to the insertion of 10 to 15 capsules of animal charcoal, which procedure is credited with the power of bringing about detachment of the membranes. My own experience is not yet sufficient to warrant a dogmatic opinion, but I may say that the results obtained by Mr. Woodrow, of Goole, over a period of two months are quite encouraging. I shall be glad to know the results of any member present here to-day.

Parturition Ropes.—Finally, I have here several specimens of parturition ropes, which Mr. A. E. Roberts, Chepstow, was good enough to describe to me at the "National" at York. As you will see, they are made of three strands of binder twine plaited together. The strands are first of all placed together and a piece of string is tied round all three about a foot from the end. Plait until there is sufficient to form the loop, bring over the loose ends, plait the three pairs together, as far as the shorter ends will reach, and then go on to the finish. Not only have you a good loop, but the rope doubled for about six inches, so that there

will be less tendency to injury to the legs of the fœtus.

Mr. Roberts says that no three men can break these ropes, and that *he never uses them a second time*; and therein we must admit he is sound.

Mr. Lang, replying to Mr. Walpole, said that in regard to the insertion of animal charcoal (in the case of retained placenta in a cow), it did not make any difference what quantity was used.

Mr. Gooch, initiating an informal discussion which was entered into freely, said that he had never used the charcoal. He added that he was one of those who believed in never taking the placenta from cows, at any rate not within six or seven days. He had had 43 years' experience in Stamford and district, and he had never seen any ill-effects from retained placenta. Furthermore, the cows had always taken service at the first time afterwards, and had bred successfully.

Mr. Porter-Smith said that the sanitary question entered into it. What was the effect on the milk, and the other cows, too? If they had a cow with lung trouble, it would not be long before she would go down if the placenta was not taken away.

Mr. Lalor said the placenta must be taken away.

Mr. H. Caulton Reeks, invited by the President and others to express his opinion out of his extensive knowledge, remarked that he really said all that he thought about the retaining of the placenta at the meeting held last February. He did not believe in taking away the placenta too soon in a mare.

The President said they had to watch constitutional effects.

Mr. Reeks thought the placenta was better left. He favoured irrigating the uterus with salt solution. They used to dread these cases years ago, but they did not now.

With reference to the horse's shoe exhibited by the President, the general opinion of the members present seemed to be that the shoe acted more or less mechanically in cases of ringbone.

The President remarked that he agreed with those who had said that there was nothing like rest for cases of ringbone. He did not claim that the type of shoe he had shown cured ringbone.

Several points raised in the discussion were replied to by the President, who was warmly complimented upon and thanked for his splendid paper.

Mr. Gooch, in moving that the thanks of the Association should be accorded to Mr. Lang, said that in his excellent lecture he had not only brought before them something new, but something that was rational and instructive. They were most grateful to the President. (Hear, hear.)

Mr. Lalor, seconding, also expressed appreciation.

Before the meeting concluded Mr. A. D. J. Brennan, of North Lodge, Sleaford, who had been introduced by Mr. Lalor and welcomed by the President, was nominated for membership of the Association by Mr. Hicks.

Subsequently members had tea at the hotel.

H. C. Reeks, *Hon. Secretary.*

Joint Meeting of the Scottish Metropolitan and West of Scotland Divisions.*

A joint meeting of the above divisions was held at the Glasgow Veterinary College, 83 Buccleuch Street, Glasgow, on February 16th 1924. H. Begg, Esq., F.R.C.V.S., President of the West of Scotland Division, occupied the chair. The forenoon was profitably spent in operations and demonstrations, which were appreciatively followed by those present.

Professor Robb very skilfully operated on two horses, one with a tumour on the sole of the off forefoot at the outside quarter, having the appearance of a "fibroma," and involving the sole and a portion of the sensitive wall. The tumour was the size of a large duck egg, was almost completely covered by unhealthy horn, and its dependent surface reached below that of the frog. The part was very sensitive to pressure, and when made to walk the animal was very lame. The tumour was excised and the parts cauterised and dressed. Thereafter, Professor Robb performed peroneal tenotomy on another horse having marked stringhalt of one limb. Both operations were done under chloroform anæsthesia.

Dr. Whitehouse, Principal of Glasgow Veterinary College, gave a very interesting anatomical demonstration, exhibiting carefully-dissected specimens of the male genital organs of the horse and of the circulation of the cow's udder.

Mr. Robert Mitchell, Glasgow, demonstrated the transfusion of a large quantity of saline solution into the jugular vein, and explained the siphoning process as he proceeded and also indicated its usefulness in cases of purpura and pneumonia, when he administered in this way suitable doses of camphor, formalin, etc.

Mr. Brown, a senior student, demonstrated the passing of the stomach tube, and did it with ease and precision, the animal in no way requiring restriction.

Mr. Jas. Macfarlane, Glasgow, exhibited a horse which had, three years ago, sustained fracture of the atlas. Great deformity of the bone could be seen and felt, and the animal carried the head a little stiffly, but was quite able to do his work. At the time of the accident he, for some time, was quite unable to move the head and carried it close to the ground. Treatment consisted of keeping the animal under the influence of cannabis indica, while hanging in slings. Control of the neck returned gradually, and after a long run at grass, the horse was put back to his work.

Mr. J. Howard Jones, Edinburgh, exhibited the following interesting specimens:—

1. *Congenital Tuberculosis in a Bovine Fœtus.*—Tuberculous lesions were apparent in the substance of the liver and hepatic gland of this fœtus (aged, *in utero*, approximately five months). The mother, on *post-mortem*, showed advanced tuberculosis. Her organs (with the exception of the uterus and placenta, which were, most unfortunately, destroyed before

*Received March 10th, 1924.

they could be examined) all showed well-established lesions, as did the visceral and carcase glands, including the udder and supramammary glands. No lesions were discernible in the spleen substance of the mother, nor could there be discovered any bone affection, while the lungs did not show a "miliary" condition.

2. *Hairy Abomasum of Ox.*—In the course of inspection at the abattoir, a curious condition of the abomasum of cattle has been observed of which the specimen shown was a particularly well-established example. It transpires that the abomasum of all cattle (practically without exception) and particularly the pyloric end thereof is, more or less, abundantly supplied with short hairs. I also beg to observe that the process of parboiling to which the tripe is subjected tends to intensify the erectile attitude which the hair adopts. Sectional examination discloses the fact that the hair is not growing, despite that appearance. This is quite evident, as there is no follicle present. One's natural surmise is that these small hairs are the result of the animal's licking itself, and certain of them become embedded in the stomach lining. Investigation will show that the abomasum of a black beast will have only black hairs, that of a red beast red hairs, and so on.

The point that strikes one so very forcibly with regard to this condition is that there appears to be no record of it and, to the best of one's knowledge, it is what one may term an original observation. Yet, from an examination of a very large number of these organs, it appears that the condition is so constant that it may be looked upon as something approaching the normal. The hairs in different abomasa may number anything from say a dozen to many hundreds. This particular specimen shows thousands, and many of them are of quite a good length; some are situated between and on the folds and much nearer the proximal end than is usually the case.

The company, numbering forty-four, adjourned to the Grand Hotel, Charing Cross, where luncheon was served; thereafter Professor Linton, Royal (Dick) College, Edinburgh, read his paper on "Animal Nutrition and the Veterinary Profession."

(Professor Linton's paper, together with the ensuing discussion, has received separate publication.—Ed.)

At the luncheon apologies for absence were announcd from Messrs. G. H. Livesey, Principal Bradley, A. Baird, Edinburgh; R. G. Anderson, Cupar; and A. Douglas, Ayr.

Sederunt:—Hugh Begg and J. G. Macgregor (Hamilton); Professor Linton, Professor Gofton, Professor J. Russell Greig, Professor Mitchell, Messrs. J. Howard Jones, J. Taylor, R. C. Fisher, John Weir, R. F. Montgomery (Edinburgh); Professor A. Whitehouse, Professor W. Robb, Professor Rennie, Professor Gaiger, Messrs. Jas. Macfarlane, R. Mitchell, W. Roy, J. Wilson (Glasgow); A. Linton Robertson (Arbroath); A. Logan, J. Renfrew, G. W. Weir (Glasgow); W. Wallace Peggie (Biggar); D. Brown (Kilwinning); J. Laird (Kilmarnock); T. M. Inglis (Forfar); J. Gibson (Dundee); Major A. Spruell (Dundee); Messrs. W. E. Orr (Kirkintulloch); A. Pottie, Junr. (Greenock); John Weir (Edinburgh); A. Stark (Wishaw); R. Bristow, W. Maitland, W. O'Mara, B. J. Nairn, D. S. Brown, F. McWilliam, F. D. Gillman, D. A. Petrie, T. Young, A. Sillard, J. Hillock and R. S. Marshall (Glasgow).

Some discussion then took place as to where and when the next meeting of the Scottish Branch (which problem is in the hands of the Scottish Metropolitan members at present) should take place, and it was ultimately agreed to hold it in Perth, on Saturday, 7th June. The arrangements were left with a small committee of the Scottish Metropolitan Division members.

A hearty vote of thanks was proposed and accorded to the chairman and also to the operators and demonstrators. This brought a very enjoyable and successful meeting to a close.

G. W. Weir, *Hon. Secretary*,
West of Scotland Division.

Eastern Counties Division.

(*Continued from page* 247)

Victoria Veterinary Benevolent Fund.

The Chairman proposed that the Society should give the sum of five guineas to the Victoria Veterinary Benevolent Fund, as last year. He said that the Fund felt it very hard to come to decisions which were right and just because of the fact that they had not enough money to relieve every case in the way they would like. This proposal received the seconding support of Mr. P. R. Turner.

The Secretary said that some time ago when he forwarded the Society's donation of five guineas to Mr. Bullock, he (Mr. Bullock) wrote asking if it was the intention of the Society to make this sum a donation or a subscription. Mr. Shipley felt that as most of the members of their Society were members of the Fund, there was no occasion to make this a regular subscription. If the balance sheet of the Fund did not come up to what had been hoped it would, then the Society could, if in a position then so to do, make a special grant of whatever amount it could afford. He asked the meeting to confirm his action, which was to the effect that the sum of five guineas sent in 1923 was intended as a donation and not as an annual subscription. This was agreed to.

Mr. H. P. Standley made reference to the National Mutual Veterinary Benevolent and Defence Society, remarking that apparently very few members of the profession even knew of its existence. Of the benevolent section of that society he was unable to say much, but strongly emphasised the essential duty of each and all to join that society. He said the Defence Society assisted veterinary surgeons in any case of litigation that might be brought against them—in fact, took matters entirely into their own hands on behalf of the member. The subscription was only half a guinea, said Mr. Standley, and the entrance fee a guinea.

The name of the secretary, so far as he knew, was Mr. Locke, of Manchester.

Mr. H. BUCKINGHAM spoke in support of Mr. Standley's reference to the Defence Society, remarking that it was worth while having a society like that to back one up. He had himself been a member for many years past. He understood that the reason it was also called "Benevolent Society" was that when the society had accumulated certain funds, it devoted a portion of them to assisting necessitous cases.

Mr. H. V. LOW proposed that five guineas be given to the Farmers' Benevolent Association, but the meeting rejected this motion.

On the proposition of the CHAIRMAN, Mr. P. Wright (Mr. Shipley's clerk) was accorded a vote of thanks for his work in connection with the division, and was awarded an honorarium of three guineas in appreciation.

The SECRETARY remarked that at the last meeting Professor Buxton had unofficially invited the members to hold their meeting at Cambridge, and he (the Secretary) would like Professor Buxton to say whether or not this kind invitation was still open, and if they might come on the occasion of their next meeting, which would be the summer meeting held in July, or would the matter have to be put off for the time being.

Professor BUXTON replied that he and his staff would be delighted to meet the members at any time, although he would say that all the buildings were not yet complete, but they would have plenty of work of interest to the members.

The SECRETARY therefore proposed, and Colonel WOOD seconded, that the next meeting be held at Cambridge. This was unanimously agreed to, the date, etc., being left in the hands of Colonel Wood and the Secretary.

Mr. H. P. STANDLEY moved that the Society should, on this occasion, invite the Lincolnshire Veterinary Association to join them. This was seconded by Colonel WOOD and agreed.

The CHAIRMAN, on behalf of the meeting, thanked Professor Buxton for his kind invitation, and asked him to give the meeting the benefit of his experiences at his Institute.

THE CAMBRIDGE INSTITUTE.

Professor BUXTON, in his "talk on the work of the Institute of Animal Pathology at Cambridge," dealt very ably with its relationship to the veterinary surgeons of the Eastern Counties.

Professor Buxton said he came amongst them that afternoon to talk to them in quite a friendly spirit—he could not do otherwise. He strongly emphasised the greatest importance of the closest possible co-operation of the veterinary surgeon with the laboratories of the Institute, and asked for help to solve the great problems confronting them in their research work of the diseases of animals. He said this could best be done by the veterinary surgeon finding him as much work as possible and giving them all the information that was available, and in return the Department could help and probably advise the veterinary surgeon in the difficulties met with in everyday practice.

He explained the degree of efficiency that had been obtained in the laboratories, and the measures intended to be carried out in the future. He remarked that when he was first appointed he had dreaded the work before him, because he felt it would be tedious uphill work all the time, but to his amazement it had been delightful, as work had simply flowed in. His department were always prepared to help the veterinary practitioner in every possible way. Professor Buxton made reference to the losses in the country amongst stock from certain diseases, particularly in sheep; also to the question of bacterial sterility of bovines and horses; while he also informed the meeting that his department were prepared to supply autogenous vaccines to the profession.

Mr. H. V. LOW said how much he appreciated Professor Buxton's address, and this was confirmed by Mr. HEATLEY and Mr. H. BUCKINGHAM, both of whom spoke of their pleasure in finding that the department could be of assistance to them in difficult diagnoses of diseases.

Mr. STANDLEY remarked that generally practitioners had neither the time nor the proper apparatus with which to do research or microscopical work, and it would benefit them to obtain the help of the department.

The CHAIRMAN added that he felt that the profession had found the missing link in their work, and now had the opportunity for which they had been waiting for many years. He remembered being called in during the latter stages of the war to see certain sheep which had aborted. The owner had, in his innocence, put abortion down to the fact of the bombing and air raids prevalent at the time, and he (the Chairman) had, like many other practitioners, sent up materials to the laboratories, but got little or no satisfaction for the trouble he had taken. He also emphasised the pleasure it gave him to know that from this department one could obtain autogenous vaccines, as stock vaccines did not always give the results anticipated.

A hearty vote of thanks to the Chairman for his services during the past two years was carried unanimously, and concluded the business of the meeting.

The following motion, which was adopted, should have been included in the section of the report of this meeting which appeared last week:—

"On the proposition of Mr. T. G. Heatley, seconded by Colonel Wood, the Secretary was instructed to write and offer the sympathy of the Society on the occasion of the recent illness of Mr. G. T. Matthews, and to express their pleasure at the report of his progress, and to wish him a speedy recovery."

W. SHIPLEY, *Hon. Secretary.*

Notes and News.

The Editor will be glad to receive items of professional interest in these columns

Diary of Events.

April 8th—N.V.M.A. Committee Meetings.
,, 8th—Meeting of the Derbyshire Division at the Royal Hotel, Derby.
,, 9th—N.V.M.A. Council and Committee Meetings.
,, 10th and 11th—R.C.V.S. Council Meetings.
,, 10th—Annual Meeting and Dinner of the Mid-West and South Wales Division at Bristol.

In looking through the new list of Justices of the Peace for Banffshire we were very pleased to see the name of Mr. William Anderson, M.R.C.V.S., of Brunscar, Keith. Mr. Anderson is senior member of the firm of W. and T. Anderson, and recently resided at Craigisla, Keith. He is well known throughout a large district and bears a very high reputation.

* * * *

We are very pleased to learn that the operation on Major Percy Simpson was quite successful and that he is now progressing favourably. His help will be very much missed at the Council and Committee meetings next week. Few take more interest than he in the business of the Association.

* * * *

There are still a few who perhaps think that two guineas is a large sum to pay each year to the National. There are others who have proved the contrary, and we can give numerous instances where the two guineas has been a cheap and sound investment. Meanwhile we quote from a letter before us :—"I wish I could express my gratitude to you for putting this chance in my way. As a newly-qualified man I greatly appreciate the interest which the 'National' and the *Record* are taking in the younger members of the profession. Again thanking you, I remain, etc." We have on occasion had complaints from members as to delay and non-delivery of goods after money had been prepaid to tradesmen. In one case an expense of several pounds was involved. We took the matter up with the firm in question, with a most satisfactory result to our member, and we hope he now considers his subscription of two guineas was well worth while.

* * * *

Members who can do so are invited to draw the attention of firms with whom they do business to the TRADE EXHIBITION which will be held in conjunction with the Congress at Aberdeen. We want to see this exhibition made a success, and arrangements are being made for better accommodation and space than in former years. Full particulars will be announced at a later date, but it is not too early now to begin to advertise it amongst those who may be interested.

After a long period during which we have seen very little of him at meetings it was pleasant to meet again Mr. A. L. Sheather, who gave a really admirable lecture and demonstration at the Southern Counties meeting last week. Very elaborate preparations in the way of lanterns and microscopes were made, and the afternoon was most instructive and interesting. Mr. Sheather had his reward in the cordial thanks of the meeting and was elected an Honorary Fellow of the Society.

Programme of the Second International Congress of Comparative Pathology.

The Second International Congress of Comparative Pathology will be held in Rome between April 27th and May 4th. 1924, under the Presidency of Professor Perroncito, Professor of Animal Pathology in the University of Turin. In the Calendar which has been issued there are some eighty-five headings of subjects to be dealt with, and these include papers and discussions on the following :—

Gland Grafting and the Endocrine Functions of Glands ; Experimental Nerve Grafting ; The Tenacity of Animal and Vegetable Parasites ; Cancer Research ; Diseases of Nutrition ; Diseases due to Filterable Viruses ; Foot-and-Mouth Disease ; Rinderpest ; Chicken Cholera ; Bee Diseases ; Silkworm Disease ; Bacteriofages ; Animal and Vegetable Tumours ; Piroplasmosis and Anaplasmosis ; The Life History of Numerous Parasitic Worms ; Mange ; Arteriosclerosis of Man and Animals ; Swine Fever ; Diabetes ; Rabies ; Tuberculosis ; Ankylostomiasis ; Coccidiosis ; Leucemia ; Influenza in Man and Animals ; Parasites of Fishes and Shell Fish ; Anthrax, Black-leg, Botulism ; Abortion ; Syphilis in the Rabbit ; Sleeping Sickness ; Glanders ; Actinomycosis ; Echinococcus ; Bilharziosis ; Plague ; Animal Asthmas, and many other things which have relations to diseases of interest to man and animals.

The readers of papers and openers of discussions include many well-known names amongst pathologists on the Continent and in America, and further details can be obtained on application to Frederick T. G. Hobday, Secretary of the British Veterinary Section, 165 Church Street, Kensington, W.

Spread of Malta Fever by Goats.

Every Parisian remembers from childhood, says *The Lancet*, the pleasant sight of the itinerant goatherds, in the quieter quarters of the city, leading their little flocks of five to ten goats to the sound of a rustic flute. These were the vendors of goats' milk, and they brought something of the Mediterranean sunshine into the streets of Paris. A customer would bring a bowl, which the flute-player would fill with warm milk drawn there and then from one of his herd. Unfortunately, it has been found that this milk was dangerous. Several cases of Malta fever (*Micrococcus melitensis*) were notified in Paris, and investigation showed that children were infected by the milk of these itinerant vendors. In consequence, an

order has been issued prohibiting the sale of milk from such sources in the public streets, and the Council of Public Health of the Department of the Seine, under the presidency of Professor H. Vincent, has enacted the following measures:—(1) Veterinary inspection of goats; (2) Control of itinerant goats'-milk vendors in the Department of the Seine. Goats which come from contaminated districts must not be allowed on the streets. Only thus can protection be ensured from a disease whose spread would be a great danger in the north of France.

Foot-and-Mouth Disease.

MR. BUXTON AND A "STAND-STILL" ORDER.

A number of questions with regard to foot-and-mouth disease are answered in Parliamentary Papers by Mr. Buxton, Minister of Agriculture.

In reply to a question by Lord Henry Cavendish-Bentinck, Mr. Buxton states that he is advised that to be effective a stand-still Order must be imposed for a longer period than three weeks, and in view of the great movements of both cattle and sheep to their summer grazings which normally take place in April, he cannot justify such a great disturbance to the industry as would be involved by an immediate stand-still Order.

In reference to the suggestion of the Diseases of Animals Committee of the Notts County Council that the cases of foot-and-mouth disease in their area originated with freshly imported Irish cattle, the Minister states, in reply to Mr. Loverseed, that after very careful investigation the Ministry is forced to conclude that the cattle contracted the disease in this country and did not introduce infection from Ireland.—*The Times.*

LIVERPOOL SCHOOL OF VETERINARY SCIENCE.

Diplomas in Veterinary Hygiene have been awarded to Messrs. G. O. Davies, M.R.C.V.S., and A. W. Holtum, M.R.C.V.S.

ESTATE OF CAPTAIN GEOFFREY BENNET.

Captain Geoffrey Harbord Bennet, of Melton House, Exning, Suffolk, formerly of the Royal Army Veterinary Corps, veterinary surgeon, and the leading amateur steeplechase rider, who rode Sergeant Murphy, the winner of the Grand National last year, and who had already ridden 62 winners during the present season, who died in London on January 13th last, intestate, aged 29 years, from the effects of an accident at Wolverhampton on December 27th last, left estate valued for probate at £1,100 8s. 10d. gross, with net personalty nil. Letters of administration of his property have been granted to his widow, Mrs. Cecily Clayton Bennet, of the same address.

In the report of the discussion on Professor Linton's paper at the joint meeting of the Scottish Metropolitan and West of Scotland Divisions, published in the *Record* of March 22nd, Professor J. Russell Greig is reported to have stated that during the war horse flesh was given to horses in the form of bolus. Professor Greig writes: "This is obviously absurd: the flesh was *fed* to the animals and not administered by hand."

Army Veterinary Service.

LONDON GAZETTE—WAR OFFICE—TERRITORIAL ARMY.

Captain A. D. Sanderson resigns his commission and retains rank of Captain (April 2nd).

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue. All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Milk Scandal.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—In an editorial under the above heading, in your issue of 22nd March, I notice the following:—

"The proper control of tuberculin would have been obtained under the Therapeutic Substances Bill, which is shortly to be re-introduced in Parliament with the support of the Ministry of Health. As a result of its provisions the working of the Orders under the Milk and Dairies Act (Amendment) Act would have been made of definite use, and a real value attached to the new graded milk. Now, however, we hear on authority that veterinary therapeutic substances, including tuberculin, are to be expressly excluded from the Bill, and this provision is inserted at the instance of the Ministry of Agriculture. We are not proud of this attitude of the advisers to the Ministry of Agriculture, etc."

I take it it is claimed for the above that it is a full and correct statement of the position. Its design, however, would certainly appear to be to give your readers the impression that the Ministry of Health had agreed to control the sale of tuberculin, under the Therapeutic Substances Bill. As a member of the Committee of the Council of the R.C.V.S., which dealt with this Bill, I am aware that the Ministry of Health never undertook to do anything of the kind; in fact, when I was asked several months ago by the Committee of the Council to sound the Ministry of Health on the subject, I received the answer which I conveyed to the Committee, and which was in exactly similar terms to the letter which I now understand was addressed by the Ministry of Health to the Association on the 11th March, and which it is reasonable to believe was the "authority" to which the National Veterinary Medical Association's paper referred in the statement "we hear on authority, etc.," in its issue of March 22nd.

May I ask if I am not correct in saying that the reasons given by the Ministry of Health for declining to include tuberculin are identical to those which were given to me, and which I conveyed to the Committee of the R.C.V.S., as follows:—

That the purpose of the Therapeutic Substances Bill is to control the manufacture and sale of therapeutic substances, with the object of securing a proper standard of quality, and that it is not within the intention of the Bill to exercise any control over purchasers of these substances, or to deal with therapeutic substances other than those manufactured for human use.

That seems a perfectly reasonable attitude, but it does not support the statement in the editorial, which at least implies that the Ministry of Health had the intention of including in the Bill provision for controlling the sale of tuberculin. What the attitude of the Ministry of Agriculture may be towards the proposal that the sale of tuberculin should be controlled I am, for obvious reasons, unable for the moment to discuss, but I am at liberty to point out that what the Ministry of Health has actually said, in addition to the above, is as follows:—

That because this Bill seeks only to control the quality of substances for use in the case of humans, and also since the Ministry of Agriculture does not wish veterinary preparations to be included in the principal provisions of this Bill, the Ministry of Health cannot see its way to bring in a Bill of a totally different character from the original.

Further, I would point out, what must be apparent, that tuberculin is a substance employed equally in human medicine as in veterinary medicine, except that it is much more entitled in human medicine to be considered a therapeutic substance; and again, that the reason why the control of tuberculin in the only way which most of

us, as veterinarians, believe would be of value is excluded from the Bill is that it is against the intention of that Bill to exercise any control over purchasers.

Permit me to assure you that my sole reason for commenting upon the editorial is that when an important matter of this kind is occupying the minds of the profession, and is likely to be discussed by it, it is liable to impede, rather than expedite, arrival at a line of action if the profession—however unintentionally—is given a wrong impression of the position.—Believe me, yours sincerely, S. STOCKMAN.

Ministry of Agriculture and Fisheries,
4 Whitehall Place, London, S.W.1.
29th March, 1924.

Tuberculin Testing.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—With regard to the above, I wish to quote an admirable control method the Dental Profession have.

I wrote to a Bristol firm for a tooth dressing to try in practice that I saw my dentist once use successfully.

My reply, in due course, came from the Dentists' Registrar, asking that my dental qualifications be sent to him before the firm could forward the preparation.

On replying that I was a veterinary surgeon, I had every politeness shown, and the preparation forwarded to me.

I have no idea how many firms are allowed to sell tuberculin, nor to what extent it can be procured by those, other than the Medical and Veterinary Professions, but in view of the great part tuberculin testing is now taking in dairy farming, its success, in my opinion, will largely depend on the reliability of the test.

I therefore think, if tuberculin can be controlled, the present will be the best time for doing so.—I am, Sir, yours faithfully, WILLIAM TWEED.

The Mullan, Ballymoney,
25th March, 1924.

Veterinary Inspectors' Fees.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Enclosed I forward you a cutting from the *Leicester Mercury*. I think the Councillor's remark with reference to the examination of 5,050 cows for £50 means that about 1,271 cows would be examined each quarter and most of them again at each visit, or four times during the year; this works out at the magnificent sum of approximately twopence-farthing per cow per visit, including travelling expenses, etc. If veterinary surgeons are so anxious and willing to contract or accept such low payment for the examination of cows under the Milk and Dairies Amendment Act, they lower their own prestige and the status of the profession before the general public and members of rural district councils, who indulge in laughter and show them no respect when their reports are read. Some veterinary surgeons in this district have refused to examine cows at such a ridiculously low price as district councils have offered for services required, whilst others have been very keen to do the work at a rate which general labourers or scavengers would decline to accept as wages for their own work, although higher fees could easily have been obtained. It would be interesting to know what fees or salary are being paid per annum by district councils in other counties, how many cows are inspected, how many visits made, whether twice or four times during the year, and if travelling expenses are included for the journeys.—Yours faithfully, T. H. HOBSON.

37 Humberstone Road, Leicester,
March 24th, 1924.

The cutting forwarded by our correspondent reads as follows:—

"At the Hinckley Rural District Council meeting yesterday, Mr. G. H. Ward (inspector) said that he had examined 1,271 cows during the last quarter. Some with inefficient udders had been got rid of. Mr. Astley remarked that it was the finest thing that the Government had done—the appointment of inspectors—(laughter)—to help the farmers, who got expert opinion. The inspector had examined 5,050 cows for £70."

The Misuse of Tuberculin.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—If it be true, as currently reported, that veterinary products are to be excluded from the provisions of the Therapeutic Substances Bill, I hope your timely editorial of last week may help to have this decision re-considered, especially so far as tuberculin is concerned. The statement of the Minister of Agriculture that the misuse of tuberculin is not prevalent is directly contrary to the evidence given before the Biological Products Committee, appointed to investigate this among other cognate questions Overwhelming evidence was given there that the fraudulent misuse of tuberculin is very prevalent. There was also evidence from more than one manufacturing firm of high standing that they would welcome Government supervision At present there appears to be no guarantee of either the purity or potency of the material supplied, and there is no doubt the Veterinary Profession has received much undeserved censure from the certificates given after testing "prepared" cattle or from an inferior tuberculin. Veterinary surgeons are the only persons who should be allowed to test cattle, and owners should be compelled, before the test was applied, to agree to ear marking or some other method by which a prospective purchaser would be enabled to distinguish a reactor. This cannot be done unless tuberculin is standardised and its sale controlled.—Yours, etc., W. WOODS (*Member of the Biological Products Committee*).

Brentwood, Wigan, *April 1st*, 1924.

The Editor begs to acknowledge the receipt of the following:

Communications from Dr. O. C. Bradley, Messrs. W. Collinson, E. P Edwards, F T. Harvey, G. Mayall, R. H. Smythe and J. Troughear.

Report of the North Midland Division Annual Meeting at Sheffield, from Mr. J. S. Lloyd, Hon. Secretary.

Report of the Yorkshire Division Annual Meeting at Leeds, from J. Clarkson.

Report of the Principal Chief Veterinary Officer to the Government of the Gold Coast.

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